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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,805	06/07/2005	Matthew Francis	MERCK-3033	6490
23599 7590 05/03/2007 MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			EXAMINER WU, SHEAN CHIU	
			ART UNIT 1756	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/537,805

Applicant(s)

FRANCIS ET AL.

Examiner

Shean C. Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/7/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. Claim 10 provides for the use of medium, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

2. Claims 3- rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 3, the word “preferably” in the notation “R<sup>0</sup>” is indefinite.

In Claim 4, the last two lines, the word “preferably” is indefinite.

In Claim 5, on line 2, the word “further” or “additionally” should be inserted before “comprises”.

In Claim 7, the formula I1-I3 and II are not defined.

In Claim 9, on line 2, the word “further” or “additionally” should be inserted before “comprises”.

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In Claim 14, the claim does not have an antecedent basis because the word "CLC" is not defined in Claim 1.

In Claim 15, the "laser material" and "resonator" do not have an antecedent basis.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-4 and 6-8 and 10-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of U.S. Patent No. 6,858,268.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the parts of the claimed subject matters are the same between the present claims and US '268.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-8 and 10-13 are rejected under 35 U.S.C. 102(a) as being anticipated by DE 10221751 (or WO 2002/00979 or equivalent US 2004/0,173,775).

The reference discloses a high-torsion liquid crystalline medium, which is useful for electro-optical display devices including especially suitable for use in SSCT and PSCT displays even when only one of these dopants is used in low amounts (see abstract and [0325] of US '775).

The reference teaches that the optically active component comprises one or more chiral dopants whose twisting power and concentration are selected such that the helical pitch of the liquid crystal medium is less than or equal to 1  $\mu\text{m}$ . The helical pitch of the medium is from 130 nm to 1000 nm. The helical pitch is chosen such that the medium reflects light in the visible wavelength range from 400 to 800 nm (see [0091-0093] of US '775).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

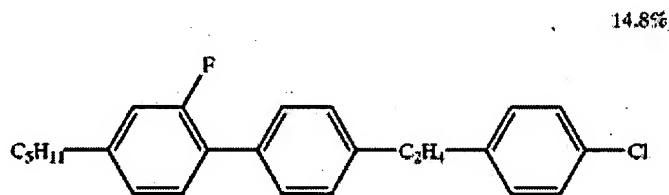
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 8-9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 10039377 (equivalent US 2003/0,052,305 or US 6,660,345).

The reference (US '305) discloses a thermochromic liquid crystalline medium comprising a liquid crystalline host component and a chiral component. Thermochromic materials are specific types of cholesteric liquid crystals (CLCs). The reference further teaches that the thermochromic media can combine with conventional absorption pigments, dyestuffs, or other thermochromic or photochromic materials (see [0124]). The reference discloses a chiral dopant having a HTP (high twisting power). The reference formula II reads on the present formula I, particularly see the compound of



examples. The thermochromic medium exhibits the reflection color from red (600 nm) through yellow and green to light blue (480 nm) (see abstract and section [0134]).

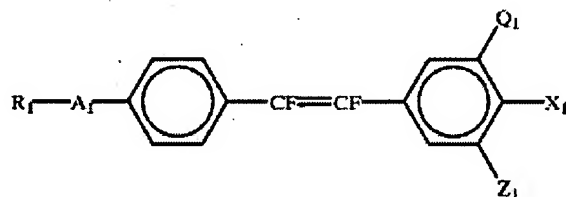
Although the reference media do not show the helical pitch  $\leq 1 \mu\text{m}$ , however, one of the ordinary skilled in the art would expect the reference examples having a helical pitch within the claimed range because the reference examples comprising the present formula I and chiral component.

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9. Claims 1-6 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2001/0,004,108 or US 6,565,932).

The reference discloses a reflective type liquid crystal display, which has a nematic liquid crystal composition, which exhibits a cholesteric phase at room temperature. The liquid crystal composition contains a nematic liquid crystal mixture containing a liquid crystalline difluorostilbene compound, and a chiral agent. The concentration of the liquid crystalline difluorostilbene compound in the liquid crystal composition is preferably in a range from 5 wt % to 60 wt %. The reference further teaches that Various kinds of well-known coloring agents, for example, azo compounds, quinone compounds, anthraquinone compounds, dichroic dyes, etc. are usable, and two or more of these coloring agents can be used in combination. The concentration of the coloring agents is preferably not more than 3 wt % of the total of the liquid crystal components and the chiral agents (see abstract and section [0067], [0086] and [0089]).

The reference formula A reads on the present formula I, particularly see the compound of



$A_1$ : single bond or 1,4-cyclohexylene group

$X_1$ : —F, —Cl or —CN

$Q_1$ : —F or —H

$Z_1$ : —F or —H

. Also see the compounds A1-A64.

The reference discloses that by changing the concentration of the chiral agent in the liquid crystal composition, the wavelength of light to be selectively reflected by the liquid crystal composition can be adjusted and can be set within the visible spectrum. (400 nm-800nm) ([0052]). Also, see the references examples.

Although the reference media do not show the helical pitch  $\leq 1 \mu\text{m}$ , however, one of the ordinary skilled in the art would expect the reference examples having a helical pitch within the claimed range because the reference examples comprising the present formula I and chiral component.

With respect to claim 13, the active-matrix reflective display is well known in the art by using a LC medium having a cholesteric phase, therefore, it would have been obvious to those skilled in the art to utilize the reference LC media in the active-matrix display.

10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over 2001/0,004,108 as applied to claims 1-6 and 8-13 above, and further in view of US 2002/0,003,827.

The reference (US '108) teaching has been previously set forth in section 9 above. The reference differs from the present invention in that the present invention has an active laser material and application thereof by using the LC medium of the present invention. Because the cholesteric liquid crystal (CLC) medium used for laser material and its application are known in the art (see section [0067] and claims 21-22 of US '827),



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it would have been obvious to those skilled in the art to utilize the reference CLC medium for laser material and its application.

11. Please provide the copies of the foreign patent documents and non-patent literature (007-015) cited in PTO/SB/08A to complete the record. If non-patent literature document (015) is not written by English, please also provide the English translation for consideration.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Shean C. Wu

**SHEAN C. WU**  
**PRIMARY EXAMINER**